

# 2017 National Geospatial Data Asset (NGDA) Dataset Report

## Waterway Lines

### Introduction:

This report aggregates information related to the National Geospatial Data Asset (NGDA) in the title above. In order to be designated an NGDA, the dataset must meet the criteria outlined in the Office of Management and Budget [OMB Circular A-16 Supplemental Guidance](#). The guidance also directs Federal agencies to implement and use a portfolio management approach to ensure NGDA Datasets are managed by officially designated agencies, on behalf of all users, as national capital assets. As part of this process, the NGDA Dataset Managers regularly assess the maturity of their NGDA Datasets based on the [geospatial data lifecycle](#) and agency business requirements. All NGDA Datasets are assessed uniformly using a set of benchmark questions and a maturity index. This report includes results from the 2017 Lifecycle Maturity Assessment (LMA) which will be used to inform NGDA Dataset Managers about priorities and will be aggregated into a Theme Summary Report for NGDA Theme Leads.

### NGDA Dataset Details:

**Official Title:** Navigable Waterway Routes (National)

**Metadata Record Title\*:** [Navigable Waterway Routes \(National\) - National Geospatial Data Asset \(NGDA\) Waterway Lines](#)

**Theme:** Transportation

**Dataset Lead Agency:** U.S. Department of Defense, U.S. Army Corp of Engineers

#### Theme Executive Champion(s):

**Name:** To be determined  
**Agency:**  
**Email:**

#### Theme Lead(s):

**Name:** Raquel Wright  
**Agency:** U.S. Department of Transportation  
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#### Dataset Manager(s):

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*\* If the metadata has been updated and re-harvested after publication of this report, the link may no longer be valid. The NGDA Dataset may be searched for manually in Data.gov or GeoPlatform.gov using the metadata record title.*

## 2017 Lifecycle Maturity Assessment (LMA)

Reporting on the status of each NGDA Dataset is an OMB requirement, and assessing the developmental maturity of the NGDA provides managers the ability to support NGDA Datasets in a more universal and transparent manner. The LMA is based on the OMB Circular A-16 seven stages of the [geospatial data lifecycle](#) with associated benchmark activities for each stage. Each benchmark has a range of activities, from no activity to significant activity, which provide the interpretation of maturity for that benchmark. The cumulative level of activity determines the maturity of the each NGDA Dataset and is based on a [Maturity Matrix](#) and [How to Calculate Maturity](#). Additional information can be found at the GeoPlatform.gov [2017 Lifecycle Maturity Assessment \(LMA\)](#) community web page.

## 2017 LMA Questions and Responses

The 2017 LMA includes a series of questions about the benchmark activities within each lifecycle stage, an explanation of specific actions that might be used to accomplish the benchmark activity (clarifying statements), and a series of status metrics in the form of response options. The NGDA Dataset Manager selects the response option that most accurately describes the current maturity level for the NGDA they manage. The responses to all the questions, and their associated metrics, collectively determine the overall maturity of an individual NGDA. The 2017 LMA consists of 3 general questions and 20 maturity questions. An additional 12 questions justify response choices to the 20 maturity questions. The questions are organized across the seven stages of the [geospatial data lifecycle](#) or pertain to all lifecycle stages. The detailed 2017 LMA questions can be found in the [National Geospatial Dataset Asset 2017 Lifecycle Maturity Assessment](#) document.

### General Questions for All Stages

#### 0) Part 1: Is this dataset considered "active" or "static"?

Response: The dataset is considered active - the dataset is being actively updated and maintained and has active components in some or all of the 7 Lifecycle Stages (with the exception of the Archival Stage)

#### 0) Part 2: For the 2017 LMA, please provide what time frame the assessment includes?

Response: For an NGDA that completed the baseline assessment, responses include dataset activities from 2015 to 2017

#### 0) Part 3: Do you have a process to evaluate the dataset to determine if it continues to meet the criteria established for a National Geospatial Data Asset (NGDA)?

Response: Yes

#### 1) Is there a recurring process to obtain funding for all lifecycle stages of this dataset?

Response: Funding is from local offices, budgeting effort is minimal, staffing is minimal

#### 1.a) To justify your response to Question 1, what is the primary funding source for your NGDA?

Response: Other

Other: Data set was developed to support the Waterborne Commerce Statistics Center (WCSC) mission which is authorized by Rivers & Harbors Act of 1922.

<http://www.navigationdatacenter.us/wcsc/wcscmiss.htm>

#### 1.b) To further justify your response to Question 1, do you have secondary source(s) of funding?

Response: No

**2) Is there a process in place to ensure that open government and transparency guidelines are followed in all lifecycle stages for this dataset?**

Response: Implementation well established

**3) Are there processes and tools in place so that staff are sufficiently knowledgeable to ensure the continuity of the dataset for all stages of the lifecycle, especially during staffing transition?**

Response: Fully implemented including recurring assessments

#### **STAGE 1 - Define/Plan**

*Characterization of data requirements based upon business-driven user needs.*

**4) Are business requirements defined and formalized?**

Response: Under development

**5) Are there processes in place to ensure partners and stakeholders are involved in requirements collection?**

Response: Under development

**5.a) To justify your response to Question 5, which external partners and stakeholders are involved in the requirements collection process?**

Other - Several decisions were made by stakeholders. In 2006 waterway network merged with national channel frame to reflect correct features in GIS and channel framework for the Corps' 59 critical projects.

**6) Is there a quality assurance process for the dataset?**

Response: Developed, documented, and implementation started

**6.a) To justify your response to Question 6, what methods are used to develop and complete quality assurance assessments?**

Other - The quality assurance process was developed by Vanderbilt University. In 1996, the accuracy of waterway network was improved to 1:100,000 scale. This task was completed with use of Digital Line Graphs.

**7) Has an assessment been done to evaluate the sensitivity, privacy, and confidentiality of this dataset?**

Response: Fully implemented including recurring assessments

**8) Are defined data standards used in collecting, processing, and/or rendering the data?**

Response: Developed, documented, and implementation started

**8.a) To justify your response to Question 8, what types of data standards are used in collection, processing, and/or rendering the data?**

FGDC-endorsed standards in use: The standards were set by original developers- Oak Ridge National Laboratory and Vanderbilt University with input from the National Waterway GIS Design Committee. The Oak Ridge National Lab developed for the inland waterway; Vanderbilt constructed databases for the off-shore waterways. Vanderbilt revised the inland waterway network through use of USGS Digital Line Graph files.

## STAGE 2 - Inventory/Evaluate

*The creation and publication of a detailed list of data assets and data gaps (both internal and external) as they relate to business-driven user need.*

**9) Is an assessment done to determine if data necessary to meet requirements already exists from other sources (either within or outside the agency) before collecting or acquiring new data?**

Response: Fully implemented including recurring assessments

**9.a) To justify your response to Question 9, what actions are performed to determine if data already exists from other sources?**

Other - Dataset was developed to meet requirements to track vessel/commodity movements on commercially navigable waterways and to credit Corps of Engineers navigation projects with the correct tonnage and trip information. Existing data within the agency was used in the development of this dataset. The features are reviewed, updated and implemented on a regular basis as new data is available within or outside of the agency.

## STAGE 3 - Obtain

*The collection, purchase, conversion, transformation, sharing, exchanging, or creation of geospatial data that were selected to meet the business needs is identified.*

**10) Is there a process for obtaining data for this dataset?**

Response: Implementation well established

**10.a) To justify your response to Question 10, what actions are performed to obtain data?**

Other - WCSC is responsible for maintaining waterway network dataset.

**11) Is the metadata in an FGDC-endorsed geospatial metadata standard, follows the NGDA Metadata Guidelines, and is published?**

Response: Published and fully implemented NGDA Metadata Guidelines including recurring assessment of the metadata

**12) Part 1: Is there a business process in place to determine the geographic coverage of the dataset and establish milestones to track progress towards completion?**

Response: Fully implemented including recurring assessments

**12) Part 2: Based on the business requirements, what is the estimated completeness of the geographic coverage?**

Response: Geographic coverage is fully complete (100%) based on business requirements

**12.a) To justify your response to Question 12 Part 2, what is the geographic coverage of the dataset as defined by the business requirements?**

Response: Other

Response: The Line Shapefile covers the entire United States, Puerto Rico, also, the deep spines, Atlantic-Puerto-Rico Access, Pacific Deep Water Spine and Gulf Deep Water Spine, as required.

Data is at 1:100K scale.

#### STAGE 4 - Access

*Making data produced known and retrievable to the community through documentation and discovery mechanisms so the users can meet their business requirements.*

**13) Do you provide users access to the data in a digital machine-readable format?**

Response: Fully implemented including recurring assessments

**13.a) To justify your response to Question 13, what types of digital machine-readable formatted web services or data download services are available for this dataset?**

KMZ/KML - Keyhole Markup Language

WFS - Web Feature Service

SHP - Shapefile

#### STAGE 5 - Maintain

*The ongoing processes and procedures to ensure that the data meet business requirements.*

**14) Is there a maintenance process in place for this dataset?**

Response: Implementation well established

**15) Is there a quality assurance/quality control (QA/QC) process as part of this dataset's maintenance?**

Response: Implementation well established

#### STAGE 6 - Use/Evaluate

*The ongoing assessment, validation, and potential enhancement of data to meet user needs and business requirements.*

**16) Is there a process to determine if the dataset meets user needs?**

Response: Implementation well established

**17) Is there a process to provide users information on how to evaluate and properly use the dataset?**

Response: Fully implemented including recurring assessments

**18) Do the business processes and management practices include an assessment of changing technology?**

Response: Fully implemented including recurring assessments

#### STAGE 7 - Archive

*Facilitate the selection/appraisal retention, storage, preservation and accessibility of geospatial content with long-term value (or the disposition of material as appropriate) and establish mechanisms for the coordinated development of stewardship tools and services across all impacted Federal agencies.*

**19) Is there an archiving appraisal process for the dataset?**

Response: Fully implemented including recurring assessments

**19.a) To justify your response to Question 19, where is digital data being archived as determined by your appraisal process outcome?**

Archived at National Archives and Records Administration (NARA)

Archived at an archive facility (NARA approved)

Stored locally

**19.b) To justify your response to Question 19, where is printed data being archived as determined by your appraisal process outcome?**

No printed data is available to archive for this dataset

#### **LMA Submission and Reviewer Information**

**LMA Submission:**

**Status:** Complete

**Date:** 8/4/2017

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**Reviewed by:**

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**Date:** July 27 2017

## LMA Maturity Overview

Each of the 20 maturity question responses was assigned a maturity level based on a [Maturity Matrix](#). The maximum level of maturity (Optimized; Established) is level (5) and the least level of maturity (No Activity) is level (0). The question response maturity was then averaged across each lifecycle stage to determine the stage maturity as described in [How to Calculate Maturity](#). The table below shows the numerical maturity levels with their corresponding descriptions and characteristics.

Maturity	Maturity Characteristics for All Lifecycle Stages
<b>Optimized; Established Level = 5</b>	Dataset meets virtually all business needs of all users. The dataset is considered authoritative by owners and secondary users. It is curated across all stages of the approved lifecycle. Future needs are defined for both the primary owner and secondary users on a regular basis and resources for addressing both current and future business requirements are available.
<b>Mature; Consistent Level = 4</b>	Dataset meets all the business needs of the primary owner and most of the secondary users. The dataset is curated and used as an authoritative resource by the primary owner and secondary users. Future needs are being identified and steps are planned to address these. All stages are supported and reviewed on a recurring basis. The dataset is well managed in relation to the approved lifecycle.
<b>Managed; Predictable Level = 3</b>	Dataset meets a significant number of the business needs of the primary owner and is widely used by secondary users. Benchmark activities are occurring in at least four of the approved lifecycle stages. Management practices in relation to the approved lifecycle is moderate but consistent. Dataset is integrating changing business requirements in lifecycle stages impacting overall maturity.
<b>Transition; Transformation Level = 2</b>	Dataset meets business needs of the primary owner and has moderate use by secondary users. Benchmark activities are occurring in at least three stages. Efforts to integrate funding, include partners, and obtain data are not supported in a sustained manner. Management practices in relation to the stages of the approved lifecycle is limited.
<b>Planned; Initial Development Level = 1</b>	Dataset in initial planning or limited in meeting business needs of the primary owner. Benchmark activities in the approved lifecycle are just starting to consider secondary uses, Partners/stakeholders involvement is being defined and developed to support additional dataset uses. Dataset development is in a very early stage. Minimal or limited management against the benchmarks in the approved lifecycle.
<b>No Activity Level = 0</b>	Dataset not developed or meets project/local business needs of the primary owner. Secondary, additional uses, or partners/stakeholders were not considered. Dataset is not recognized as authoritative data or is part of a similar dataset. Not managed to any of the benchmarks in the approved lifecycle.

**Table 1: 2017 Maturity Matrix.**

## 2017 NGDA Dataset Maturity Results

Based on the maturity question responses, an overall maturity level was calculated for this NGDA, along with maturity calculations for the general questions for all stages and each discrete lifecycle stage as shown in Table 2 below.

Maturity Categories	Maturity Level
Overall NGDA Maturity	4 - Mature; Consistent
General Questions for All Stages	3 - Managed; Predictable
Stage 1: Plan/Define	2 - Transition; Transformation
Stage 2: Inventory/Evaluate	5 - Optimized; Established
Stage 3: Obtain	5 - Optimized; Established
Stage 4: Access	5 - Optimized; Established
Stage 5: Maintain	4 - Mature; Consistent
Stage 6: Use/Evaluate	5 - Optimized; Established
Stage 7: Archive	5 - Optimized; Established

Table 2: 2017 Maturity Results.

## LMA Process Changes Between 2015 and 2017

In 2015, a baseline assessment of National Geospatial Data Assets (NGDA) was performed for each of the NGDA Datasets in the federal geospatial portfolio. Information related to the 2015 baseline LMA can be found at [2015 NGDA Lifecycle Maturity Assessment](#), which also includes a link to the 2015 Reports. A follow up analysis of the 2015 LMA baseline process and its results identified ways to improve the LMA workflow, increase efficiency as well as decrease reporting burden. Several recommendations were identified and implemented in 2017, which included improvements to normalize the responses in 2017. A secondary effect of improvements to normalization is that results from 2017 and 2015 are not directly comparable. These changes, and their impacts, are detailed in the webpage: [Temporal Changes in Lifecycle Maturity Assessment \(LMA\) Maturity and Results Comparisons](#).